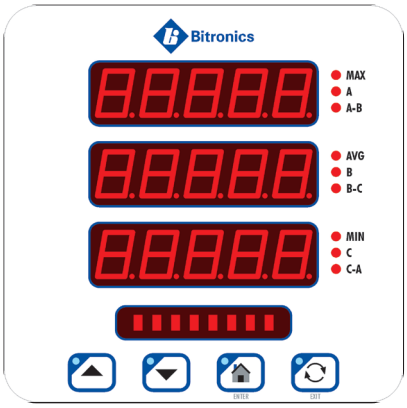
Bitronics® 50 Series
Digital SCADA Meters, 3-Phase



M650 Multifunction Meter Family

Measurement: Volts, Amps, Amps Demand/Max, Power (real, reactive, apparent), Power Factor, Energy and Frequency (all models). Volts Average/Min/Max, Power Average/Min/Max (real, reactive, apparent), Displacement Power Factor and K-Factor (M3 only). Includes many per-phase & total parameters.

Local Indication: Display over 100 electric parameters in over 30 pre-configured screens with up to three display values per screen. All three values of 3-phase parameters are simultaneously displayed. Includes automatic display of engineering units in separate display.

Port 1: Optional configurable RS-232/RS-485 serial port or 0-1mA or 4-20mA transducer output (3). All parameters available in network-accessible registers/points.

Port 2: Standard RJ45 10BaseT/100BaseTX Ethernet port that can optionally support Modbus or DNP3 TCP/IP. Optional MT-RJ 100BaseFX fiber Ethernet port replaces RJ45 port.

Protocols: Modbus or DNP3 field selectable for optional serial and/or Ethernet port.

Display Modes: Fixed, Scroll, and Fast Forward. Enable/Disable displayable screens via front screen set-up with all network register parameters always available.

Current Inputs: Scaling is field selectable to display primary-side values when connected to CTs. Any custom ratios can be written. Field selectable elements. Optional external split core CTs (three) that replace conventional internal CTs are available.

Voltage Inputs: Scaling is field selectable to display primary-side values when connected to PTs. Any custom ratios can be written. Field selectable elements. Frequency range 45-65Hz.

Auxiliary Power Supply: A universal power supply 48 - 250V dc/55 - 240V ac nominal. An option exists to have the power supply voltage input value monitored and provided as a measurement point for display and/or SCADA output.

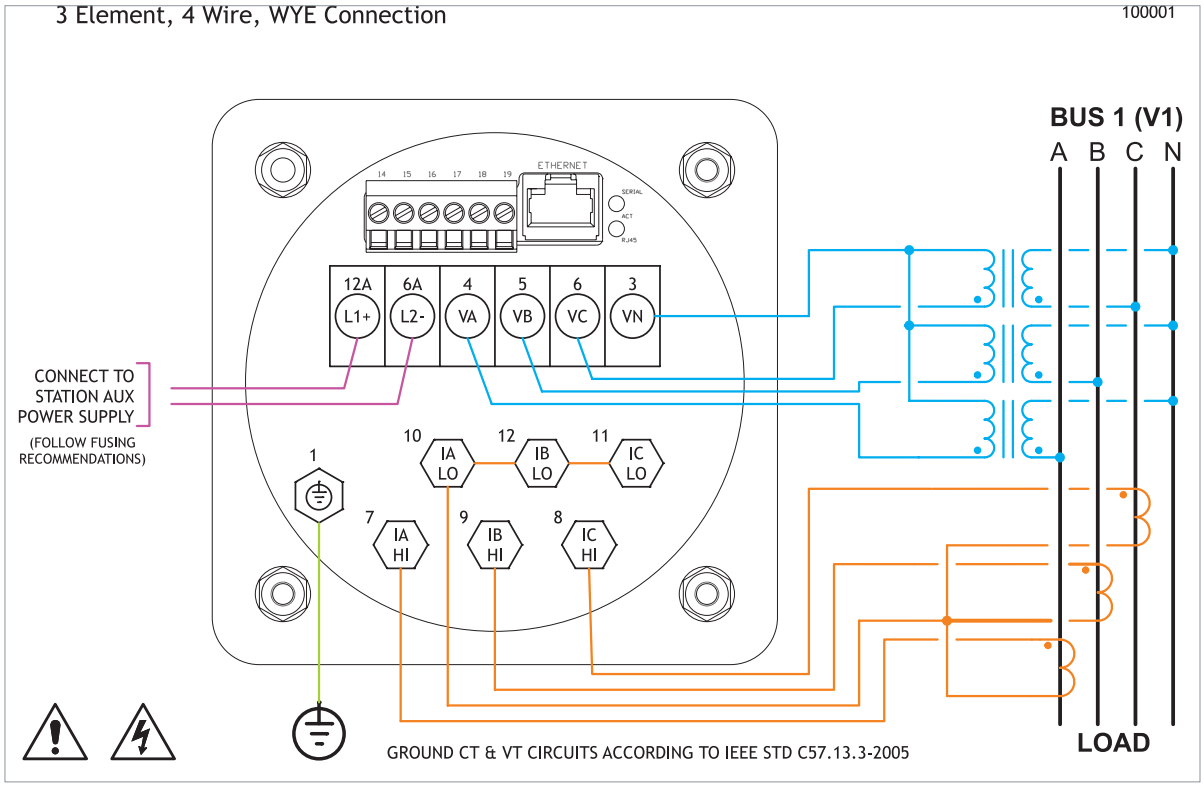
Mechanical: Three 5-digit, long life, red LED displays, 0.56" high. One 8-character red LED alphanumeric display.
4" round x 6.5" deep case. 4.5" Sq. faceplate.

Order Number = Base Model + 4 Option Codes	
Select Base Model	
Meter type:	**Base Model**
Multifunction Standard 3-Phase, Alphanumeric	M650B3
Multifunction Advanced 3-Phase, Alphanumeric	M650M3

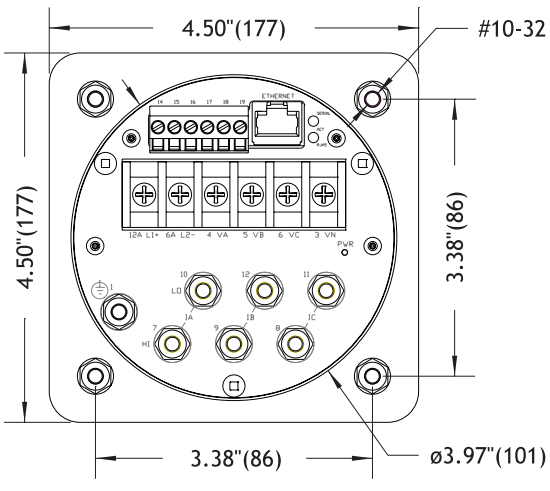
Select Option Codes		
Optional Features	**Price Adder**	**Option Codes**
Power Supply		
48-250V dc/55-240V ac	NO	U
48-250V dc/55-240 ac with monitoring (M3 only)	YES	P
Signal Input Range		
120V ac, 0-1 Amps	NO	1
120V ac, 0-5 Amps	NO	5
120V ac, 0-5 Amps Split Core CT (3)	YES	C
Port 1		
None (N/A with Signal Input Range Option C)	NO	0
Serial (Programmable RS-232/ RS-485)	YES	1
Transducer (Three 4-20mA passive)	YES	2
Transducer (Three 0-1mA active)	YES	3
Port 2		
Service Only RJ45	NO	0
Ethernet RJ45 10/100Mb protocols enabled	YES	1
Fiber Ethernet MT-RJ 100Mb, protocols enabled (N/A with Signal Input Range Option C)	YES	2

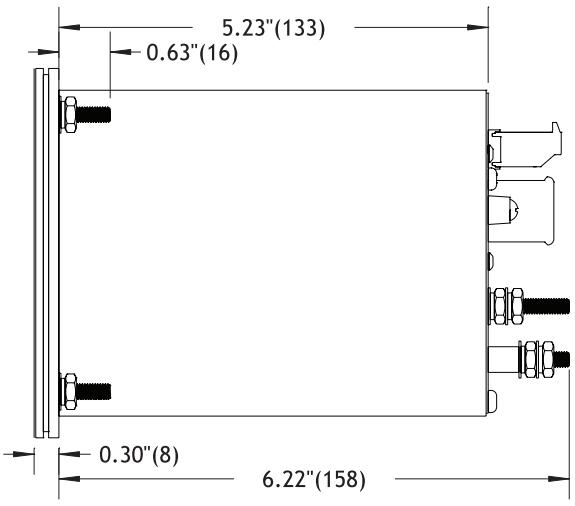
Build order number by choosing base model number and then one new option code selection for each option type.
An example: M650M3U510

Note: Default ratios (5:5 CT and 1:1 PT) will be provided.



Connections to M650 meters are simple and each M650 meter can accommodate all wiring configurations. Shown above is the 3 Element, 4 Wire Wye configuration (see M650 User Manual for other configurations).





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